		NTSB ID: DEN02FA070		Aircraft Registration Number: N30319	
		Occurrence Date: 07/08/2002		Most Critical Injury: None	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Englewood	State CO	Zip Code 80210	Local Time 1938	Time Zone MDT	
Airport Proximity: On Airport		Distance From Landing Facility: 0.5		Direction From Airport: 180	
Aircraft Information Summary					
Aircraft Manufacturer Boone		Model/Series Rotorway 162-F		Type of Aircraft Helicopter	
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>HISTORY OF FLIGHT</p> <p>On July 8, 2002, at 1938 mountain daylight time, a Boone Rotorway 162-F, N30319, amateur-built helicopter, was substantially damaged when it impacted terrain during aerial taxi at Centennial Airport (APA), Englewood, Colorado. Visual meteorological conditions prevailed at the time of the accident. The personal test flight was being conducted under the provisions of 14 CFR Part 91 without a flight plan. The pilot was not injured. The local flight originated at 1936.</p> <p>The pilot reported that he was doing hover testing of his helicopter. He said the APA Air Traffic Control Tower had cleared him to aerial taxi from Hanger 25 to the compass rose. The pilot said to get to the compass rose, he determined he would have to fly west toward the Signature Aviation building and then turn south to fly behind the building (the west side of the building), and stay between the building and taxiway A, the north-south parallel taxiway to runway 35. The pilot said that as he passed behind the building, "I think I experienced a tailwind. The helicopter began losing power and lift. I set up to do a skidding landing. The helicopter skidded and tipped forward, caught the rotor on the ground."</p> <p>In his written statement, the pilot added that he was flying at about 15 feet above the ground with a forward speed of 20 miles per hour. The pilot said that when he was south of the Signature Aviation building, he experienced significant tail winds and down drafts coming off of the hangar. The pilot said, "I experienced settling with power and did not have enough altitude to fly out of it."</p> <p>PERSONNEL INFORMATION</p> <p>The pilot held a private pilot certificate with single-engine land and helicopter ratings. The pilot reported having 465.2 total flying hours, and 63.6 hours in helicopters.</p> <p>The pilot completed a flight review on November 11, 2001, in a Rotorway 162F helicopter.</p> <p>The pilot held a second class medical certificate dated December 27, 2000, with limitations stating the holder shall possess glasses.</p> <p>AIRCRAFT INFORMATION</p> <p>The Federal Aviation Administration had certified the amateur-built helicopter for its 40-hour test flight period on June 23, 2002. The pilot reported that the helicopter had 2.5 hours total time.</p> <p>METEOROLOGICAL INFORMATION</p>					
<div>FACTUAL REPORT - AVIATION</div> <div>Page 1</div>					

National Transportation Safety Board

FACTUAL REPORT

AVIATION

NTSB ID: DEN02FA070

Occurrence Date: 07/08/2002

Occurrence Type: Accident

Narrative (Continued)

At 1953, the Aviation Routine Weather Report for APA was few clouds at 9,000 feet, broken ceilings of 14,000 and 22,000 feet, visibility 10 statute miles, temperature 82 degrees Fahrenheit (F), Dew Point 53 degrees F, winds 360 degrees at 11 knots, and an altimeter setting of 30.29 inches of Mercury.

WRECKAGE AND IMPACT INFORMATION

The NTSB on-scene investigation began at 2030.

The helicopter wreckage was located on the south side of the airport approximately 150 feet west of a north-south segment of Peoria Street, the road proceeding from the south entrance of the airport.

The helicopter's main wreckage was resting in a field on its left side with the cabin oriented on a 180-degree magnetic heading. The helicopter's tail boom rested approximately 6 feet southeast of the cabin section. The tail boom was crushed inward from the top of the boom downward and severed 26 inches aft of the powerplant compartment. The tail rotor control cable was torn outward and unraveled. The core of the cable was wrapped around the tail boom and tail rotor gear box. The tail rotor gear box was broken out and resting just aft of the tail boom. One of the two tail rotor blades remained attached to the tail rotor hub and gear box. The other tail rotor blade was broken at the base and preceded the helicopter main wreckage resting 6 feet north of the engine compartment. The helicopter's horizontal stabilizer and vertical fin were bent aft and broken.

Several scrapes in the ground were observed preceding the helicopter main wreckage. One scrape was 8 feet long and 2 inches deep and described a wide arc. This scrape was located 5 feet northwest of the main wreckage. A second scrape was located 15 feet north-northwest of the helicopter main wreckage. It was 12 feet long and approximately 3 inches deep, and also described a wide arc.

Pieces of the Plexiglas bubble comprising the windscreen were broken out and resting forward of the helicopter's cabin section. The helicopter's cabin and engine compartment were intact. The smell of fuel was prevalent in the area around the fuselage. The bottoms of the front tips of both skids showed aft-running scrapes and scratches.

The lead main rotor blade (the blade extending over the cabin) was bent downward 20 degrees and twisted aft and downward beginning 26 inches outboard of the rotor head. The tip of the lead blade was torn open. Smears of dirt and chordwise scratches were observed along the entire span of the blade's leading edge.


The trailing main rotor blade (the blade extending aft) was bent downward and twisted counter-clockwise beginning at the rotor head and extending outward along the span of the blade. The trailing edge of the blade was bent and wrinkled.


Flight control continuity was confirmed. An examination of the engine and other helicopter systems revealed no anomalies.


ADDITIONAL INFORMATION

A party to the investigation was the FAA, Flight Standards District Office, Denver, Colorado.

The wreckage was released to the helicopter's owner.

 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: DEN02FA070				
		Occurrence Date: 07/08/2002				
		Occurrence Type: Accident				
Landing Facility/Approach Information						
Airport Name Centennial Airport		Airport ID: APA	Airport Elevation 5880 Ft. MSL	Runway Used	Runway Length	Runway Width
Runway Surface Type: Unknown						
Runway Surface Condition: Rough; Vegetation						
Type Instrument Approach:						
VFR Approach/Landing:						
Aircraft Information						
Aircraft Manufacturer Boone		Model/Series Rotorway 162-F		Serial Number 3279		
Airworthiness Certificate(s): Experimental (Special)						
Landing Gear Type: Skid						
Homebuilt Aircraft? Yes		Number of Seats: 2	Certified Max Gross Wt. 1500 LBS	Number of Engines: 1		
Engine Type: Reciprocating		Engine Manufacturer: Rotorway	Model/Series: 162F	Rated Power: 150 HP		
- Aircraft Inspection Information						
Type of Last Inspection Conditional		Date of Last Inspection 06/2002	Time Since Last Inspection 2.5 Hours	Airframe Total Time 2.5 Hours		
- Emergency Locator Transmitter (ELT) Information						
ELT Installed? Yes		ELT Operated? No	ELT Aided in Locating Accident Site? No			
Owner/Operator Information						
Registered Aircraft Owner Douglas M. Boone		Street Address 6907 N. Trailway Circle				
		City Parker	State CO	Zip Code 80134		
Operator of Aircraft Same as Reg'd Aircraft Owner		Street Address Same as Reg'd Aircraft Owner				
		City	State	Zip Code		
Operator Does Business As:			Operator Designator Code:			
- Type of U.S. Certificate(s) Held: None						
Air Carrier Operating Certificate(s):						
Operating Certificate:			Operator Certificate:			
Regulation Flight Conducted Under: Part 91: General Aviation						
Type of Flight Operation Conducted: Flight Test						
<div style="text-align: center;">FACTUAL REPORT - AVIATION</div> <div style="text-align: right;">Page 2</div>						

 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: DEN02FA070																																																																																		
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First Pilot Information																																																																																				
Name		City		State	Date of Birth																																																																															
On File		On File		On File	Age																																																																															
				On File	49																																																																															
Sex: M	Seat Occupied: Left	Principal Profession: Engineer		Certificate Number: On File																																																																																
Certificate(s): Private																																																																																				
Airplane Rating(s): Single-engine Land																																																																																				
Rotorcraft/Glider/LTA: Helicopter																																																																																				
Instrument Rating(s): None																																																																																				
Instructor Rating(s): None																																																																																				
Type Rating/Endorsement for Accident/Incident Aircraft? No			Current Biennial Flight Review? 11/2001																																																																																	
Medical Cert.: Class 2		Medical Cert. Status: Valid Medical--w/ waivers/lim.		Date of Last Medical Exam: 12/2000																																																																																
<table border="1"> <tr> <th rowspan="2">- Flight Time Matrix</th> <th rowspan="2">All A/C</th> <th rowspan="2">This Make and Model</th> <th rowspan="2">Airplane Single Engine</th> <th rowspan="2">Airplane Multi-Engine</th> <th rowspan="2">Night</th> <th colspan="2">Instrument</th> <th rowspan="2">Rotorcraft</th> <th rowspan="2">Glider</th> <th rowspan="2">Lighter Than Air</th> </tr> <tr> <th>Actual</th> <th>Simulated</th> </tr> <tr> <td>Total Time</td> <td>465</td> <td>7</td> <td>396</td> <td></td> <td>21</td> <td></td> <td>5</td> <td>63</td> <td></td> <td></td> </tr> <tr> <td>Pilot In Command(PIC)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Instructor</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Last 90 Days</td> <td>8</td> <td>3</td> <td>6</td> <td></td> <td></td> <td></td> <td></td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>Last 30 Days</td> <td>8</td> <td>3</td> <td>6</td> <td></td> <td></td> <td></td> <td></td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>Last 24 Hours</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air	Actual	Simulated	Total Time	465	7	396		21		5	63			Pilot In Command(PIC)											Instructor											Last 90 Days	8	3	6					3			Last 30 Days	8	3	6					3			Last 24 Hours										
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Seatbelt Used? Yes		Shoulder Harness Used? Yes		Toxicology Performed? No																																																																																
				Second Pilot? No																																																																																
Flight Plan/Itinerary																																																																																				
Type of Flight Plan Filed: None																																																																																				
Departure Point		State	Airport Identifier	Departure Time	Time Zone																																																																															
Same as Accident/Incident Location			APA	1936	MDT																																																																															
Destination		State	Airport Identifier																																																																																	
Local Flight																																																																																				
Type of Clearance: None																																																																																				
Type of Airspace: Class B																																																																																				
Weather Information																																																																																				
Source of Briefing: No record of briefing																																																																																				
Method of Briefing: Unknown																																																																																				

 National Transportation Safety Board FACTUAL REPORT AVIATION			NTSB ID: DEN02FA070		
			Occurrence Date: 07/08/2002		
			Occurrence Type: Accident		

Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
APA	1953	MDT	5880 Ft. MSL	1 NM	360 Deg. Mag.
Sky/Lowest Cloud Condition: Few			9000 Ft. AGL	Condition of Light: Day	
Lowest Ceiling: Broken			14000 Ft. AGL	Visibility: 10 SM	Altimeter: 30.29 "Hg
Temperature: 28 °C	Dew Point: 12 °C	Wind Direction: 360			Density Altitude: 8462 Ft.
Wind Speed: 11	Gusts:	Weather Conditions at Accident Site: Visual Conditions			
Visibility (RVR): Ft.	Visibility (RVV) SM	Intensity of Precipitation:			
Restrictions to Visibility: None					
Type of Precipitation: None					

Accident Information					
Aircraft Damage: Substantial		Aircraft Fire: None		Aircraft Explosion: None	
Classification: U.S. Registered/U.S. Soil					

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot				1	1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers					
- TOTAL ABOARD -				1	1
Other Ground					
- GRAND TOTAL -				1	1



National Transportation Safety Board

FACTUAL REPORT
AVIATION

NTSB ID: DEN02FA070

Occurrence Date: 07/08/2002

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

David C. Bowling

Additional Persons Participating in This Accident/Incident Investigation:

Scott Christiansen
Air Safety Inspector
Federal Aviation Administration
Denver, CO 80249